



THE UNITED NUCLEAR CORPORATION MILL SITE

COMMUNITY INVOLVEMENT PLAN

INTRODUCTION

The Navajo Nation was the site of widespread uranium mining from the 1940s to the 1980s. While uranium mining no longer occurs within the Navajo Nation, the legacy of uranium contamination remains. More than 500 Navajo abandoned uranium mine (AUM) claims, several uranium mill sites, homes and drinking water sources with elevated levels of radiation are spread throughout the Navajo Nation.

Under the federal Superfund program, the U.S. Environmental Protection Agency (EPA) is working with the State of New Mexico Environment Department (NMED) and the Navajo Nation Environmental Protection Agency (NNEPA) to address uranium mine and mill impacts in this vicinity. EPA Region 9 – based in San Francisco, California – is responsible for the Northeast Church Rock and Kerr-McGee Quivira Mines. In 2016, EPA Region 9 completed its Community Involvement Plan (CIP) for these sites. The CIP is available at: https://www.epa.gov/sites/production/files/2017-11/documents/cip_northeast_churchrock_kerr-mcgee_quivira.pdf

EPA Region 6 – based in Dallas, Texas – and the Nuclear Regulatory Commission (NRC) are responsible for groundwater contamination at the United Nuclear Corporation (UNC) Mill

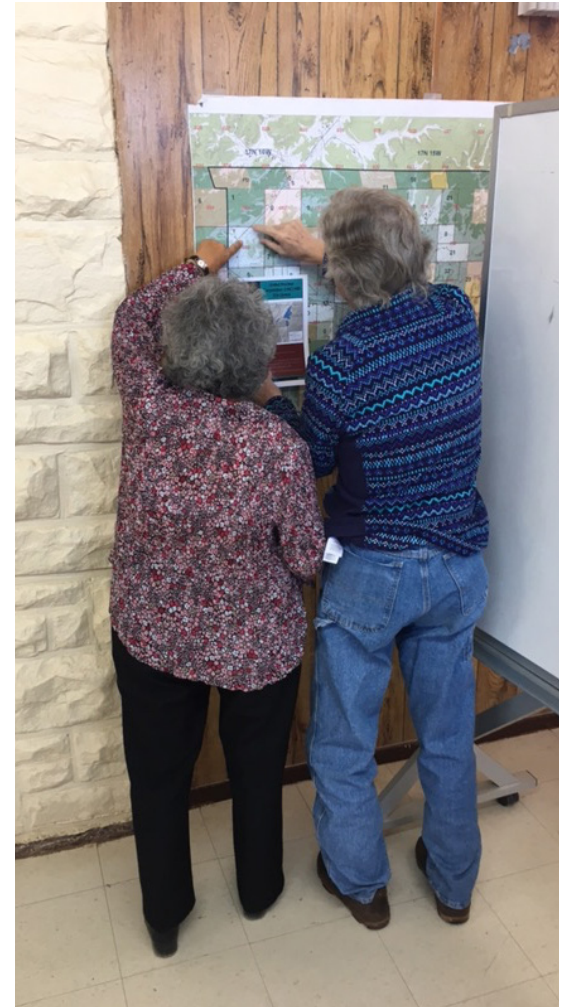
site. The General Electric (GE) Company owns the UNC Mill site property. Since this land is privately owned, NMED is also responsible. NMED is the environmental agency for the State of New Mexico. NMED enforces state regulations and federal laws relating to protection of the environment, resources, public health and safety.


NRC is responsible for the UNC Mill tailing cells. EPA Region 6 is responsible for groundwater contamination that has resulted from the UNC Mill tailing cells.

EPA Regions 6 and 9 are working jointly on moving uranium mine waste from the Northeast Church Rock mine and placing that mine waste on top of the UNC mill tailings. NMED supports EPA Region 6 in its work on the groundwater cleanup. NNEPA supports EPA Region 9 on its mine waste removal.

This CIP contains three references to EPA:

- EPA Region 6 work relates to groundwater contamination at the UNC Mill site.
- EPA Region 9 work relates to mine waste cleanup at the Northeast Church Rock and Kerr-McGee Quivira Mines.
- EPA without a regional reference refers to work done by the Agency that is not related to a specific Superfund site.



 EPA Region 6 Remedial Project Manager Janet Brooks looks over a map of the area with a local resident.

Cover image: Vantage point from Dilco Hill, overlooking part of the UNC Mill site.



**AUM: Abandoned
uranium mine**

The Community Involvement Plan (CIP)

The CIP is the foundation of EPA's Superfund community involvement and outreach program. This CIP is a living document to help community members and EPA staff talk to each other. It shares opportunities for participation and meaningful information-sharing regarding EPA's activities at the UNC Mill site. The CIP is also a tool for the public to use to make sure EPA is responsive to their needs and concerns.

To put this plan together, EPA and NMED spoke with community members, chapter officials and other stakeholders in the area in November 2017. Interview findings, combined with information from EPA experiences in the community, guided the development of the CIP.

EPA's Technical Assistance Services for Communities (TASC) program assisted EPA Region 6 during the interview process.


Activities at the UNC Mill site and the nearby Northeast Church Rock and Kerr-McGee Quivira Mines mostly impact people in the communities closest to the mines. These communities include the Red Water Pond Road community, the Rio Lobo Canyon community along Pipeline Canyon Road and the community along Highway 566 south of the mines. The UNC Mill site and the mines are also located at the junction of five chapters. The chapters are the Coyote Canyon, Pinedale, Church Rock, Standing Rock and Nahodishgish chapters. Therefore, this CIP focuses on these groups of residents, chapter officials and other interested parties. For more information, please contact NNEPA's Superfund program at (928) 871-7692.

Because these uranium mill and mine sites are so closely related, community members often think of all EPA activities as one overarching Superfund site. Several CIP interviewees' comments are related to the nearby Northeast Church Rock and Kerr-McGee Quivira Mine sites rather than the UNC Mill site. Most of interviewees' comments and concerns for the mine sites were part of the 2016 CIP for the mine sites (see link above). This CIP focuses on the UNC Mill site.

This CIP outlines EPA Region 6 outreach activities to address community concerns and meet these goals:

- Provide community members with accurate, timely and understandable information about EPA's UNC Mill site activities that reflects their communication preferences and culture.
- Coordinate with community members and tribal leaders to make sure EPA understands local concerns and considers community goals in its decision making.



 Radioactive warning sign on the UNC Mill site.



 Looking towards the UNC Mill site from the Rio Lobo valley.

COMMUNITY INVOLVEMENT PLAN ORGANIZATION

THE COMMUNITY

This section provides a brief community profile and shares issues and concerns raised during the community interviews.

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THE COMMUNITY INVOLVEMENT ACTION PLAN

This section explains EPA's plan for engaging with the communities and stakeholders. It also talks about how community members can share their input during EPA's decision-making process.

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APPENDICES

The appendices include information about:

- Site Descriptions
- Glossary
- List of Acronyms
- Uranium and Radiation Resource List

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— THE — COMMUNITY



Participants walk towards the UNC Mill site during the 37th Red Water Pond Road Spill Commemoration Ceremony.

THE COMMUNITY

COMMUNITY PROFILE

The UNC Mill site is located on private land on the southern edge of the Navajo Nation in the Church Rock Chapter in McKinley County, New Mexico. The Pinedale, Church Rock, Standing Rock and Nahodishgish chapters are northeast of Gallup and part of the Navajo Nation's Eastern Agency. Coyote Canyon is part of the Fort Defiance Agency of the Navajo Nation.

The Red Water Pond Road community and the Pipeline Canyon Road/Rio Lobo community are closest to the UNC Mill site and the Northeast Church Rock Mine and Kerr-McGee Quivira Mines. Many community members in the region own and graze sheep, cattle and horses near their home sites and the mines. Most of the land in the region is used for grazing, and on a limited basis for hunting and farming. Community members also use various plants for medicinal and traditional purposes. The region features an arid landscape. It includes rolling hills, open dry flatlands, rocky canyons and mesas as well as sections of the Rio Puerco.

Economics

According to the Navajo Nation Division of Economic Development, most jobs on the Navajo Nation are in the government and service sectors, including schools, hospitals, and hotels and motels. In this area, most jobs are in nearby Gallup, with many people commuting into town for work. Additionally, many activities in the Navajo Nation economy are unreported, such as selling arts and crafts or food at food stalls. Regardless of whether unreported economic activities are considered in employment calculations, the actual unemployment rate for the Navajo Nation is substantially higher than the national average.¹

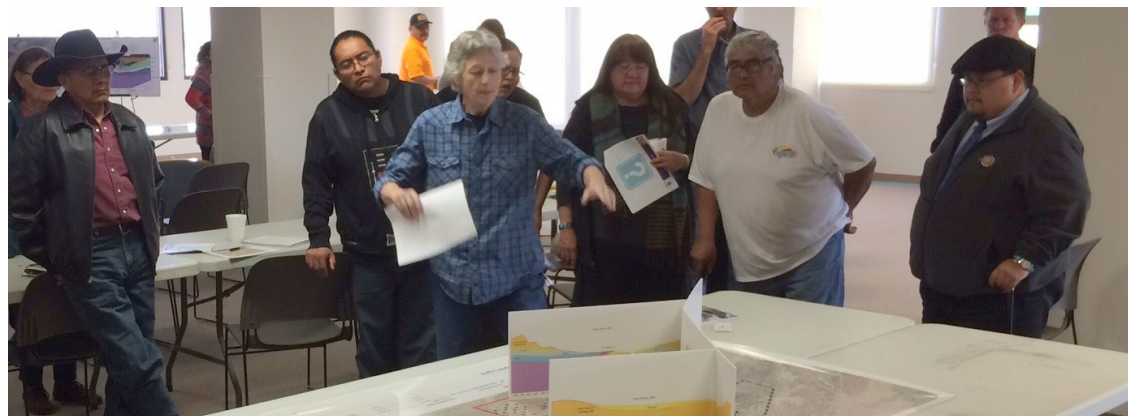
¹ Navajo Nation Division of Economic Development. 2009-2010 *Comprehensive Economic Development Strategy of the Navajo Nation*.


Demographics

About 250 to 500 predominantly Navajo people live within two miles of the UNC Mill, Northeast Church Rock Mine and Kerr-McGee Quivira Mine sites.

The languages spoken in the area are primarily English and Navajo or Diné. According to the 2009-2013 American Community Survey, more than half of community members (over 59 percent) in the area's five chapters speak a language other than English at home. More than three-quarters of community members in the area (over 80 percent) report speaking English "less than very well."²

² Navajo Nation Division of Economic Development. 2006-2010 *American Communities Survey*.



 EPA Region 6 Remedial Project Manager Janet Brooks explains the geology and hydrology of the site during a community meeting.

COMMUNITY CONCERNS AND PREFERENCES

To better understand the community, its culture and concerns, EPA and NMED spoke with community members, local officials and other stakeholders in the Coyote Canyon and Pinedale chapters in November 2017. This CIP also relies on information from when EPA and NNEPA met with community members, local officials and other stakeholders in the Church Rock and Standing Rock chapters during development of the CIP for the Northeast Church Rock and Kerr-McGee Quivira Mine sites in 2015.

All interviewees had knowledge of the UNC processing mill, the mill tailings disposal area and nearby AUMs. However, many were unfamiliar with EPA's role in addressing contaminated soils and structures in the area. In general, most interviewees think of the UNC mill site and the Northeast Church Rock and Kerr-McGee Quivira Mines as one location. Discussions often included topics such as contaminated soil removal that are not directly related to the UNC Mill site. Many community members shared stories about family members who worked in the mines, grazed livestock nearby, and drank from and washed in local water sources. The community's livestock and area wildlife rely on these waters as well. EPA Region 6 has generally included these discussions related to the mine sites as they are important to the community. These concerns are addressed in the EPA

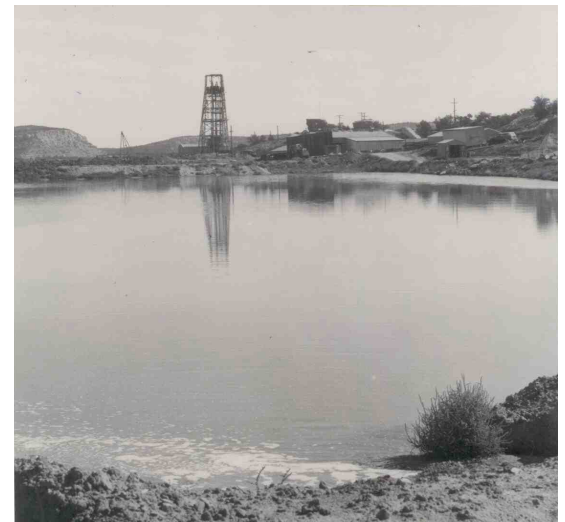
Region 9 CIP. This EPA Region 6 CIP addresses community concerns related to the UNC Mill site.


All interviewees said that the mine cleanups should be thorough, protective, lasting and timely. While community members expressed frustration at the delay in federal government involvement in the cleanup, most welcomed EPA's current efforts. Looking forward, interviewees focused on economic development, job training and expanded employment opportunities. Interviewees also noted that infrastructure improvements during cleanup could benefit economic development in the area.

Some concerns in the interviews are within the scope of EPA Region 9's work on AUMs. EPA can work with the community and tribal leaders to address them. For concerns outside of EPA's scope, EPA will work with other federal, state, tribal and community organizations.

Community concerns and preferences are grouped into the following categories:

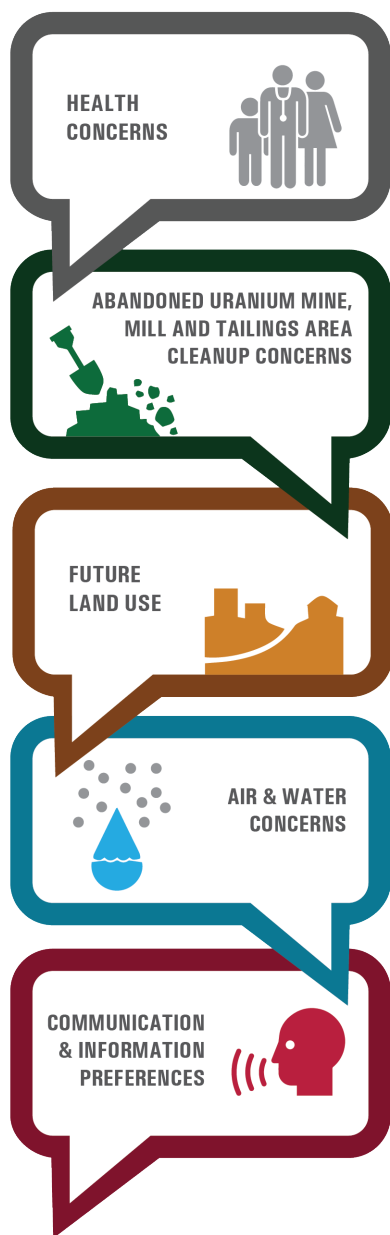
1. Health Concerns
2. Mill, Tailings Area and AUM Cleanup Concerns
3. Future Land Use
4. Air and Water Concerns
5. Communication and Information Preferences



 Historic photo from the Northeast Church Rock (NECR) Mine site, the source of the tailings at the UNC Mill site.

Health Concerns

Many community members and local officials asked about how to reduce contact with uranium and sought to better understand the risks of everyday activities. Many asked about the health effects of dust blowing from the mill and mines and tailings pile areas. They were also concerned about livestock and wildlife grazing in mine areas and drinking from contaminated water sources. Many people were concerned about the effects of drinking or farming with uranium-contaminated water.



 Community concerns and preferences.

Many community members shared stories about their own illnesses or illnesses of their loved ones. Many people indicated that recent fact sheets on radiation and uranium and cleanup fact sheets have been helpful. They asked for more information and more frequent updates on site-related health information. People discussed health effects such as cancers, stomach pain, asthma, heart problems and birth defects. They would like to understand which health conditions may be related to uranium and radiation exposure. They would also like to learn about key findings from earlier health studies in the area. The Navajo Nation Uranium and Radiation Resource List in the Appendix provides more information on these topics.

Abandoned Uranium Mine, Mill and Tailings Area Cleanup Concerns

Many interviewees shared their concerns about community involvement in the cleanup process. They asked that chapter officials and Navajo Nation committees, the Red Water Pond Road Community Association, the Pipeline Canyon Road/Rio Lobo community, and affected families and the general population in the Coyote Canyon and Pinedale chapters continue to receive timely updates. Many community members expressed concern about whether EPA would consider their input in the decision-making process. Community members and local officials also

asked EPA to clarify the roles of various agencies and organizations. They noted the need for more outreach and education about EPA's cleanup process.

Community members and local officials worry about the extent of cleanup at the planned permanent waste repository at the UNC mill tailings area and the mine areas. They also worry about community areas and homes, grazing land and wildlife habitat, and the need for clean air and water supplies. Community members shared concerns about possible unintended consequences of earlier reclamation efforts. These include sinkholes and subsidence as well as poor road conditions. They also worry about road and bridge closures and traffic from future cleanup efforts. Interviewees also noted that many areas include sacred sites, gravesites and ceremonial locations. They said that cleanup should take these cultural and historical resources into account. They also shared concerns about long-term monitoring of the cleanup and the availability of funding.

Finally, community members and local officials indicated a need for mapping, signage and education. These materials will help people – and especially children – understand and avoid mines and mine wastes in the area.



 Welcome sign for Coyote Canyon Chapter.

Future Land Use

Many interviewees stressed the need to make sure that the mill and tailings area, the mines, and community areas are safe for people to live in, work and gather.

Community members and local officials also shared their thoughts about future land use of mine areas. Some asked whether the land will ever be safe for humans, livestock or wildlife. Many said that the land should be returned safely to grazing and hunting use and wildlife habitat, and burial sites should be protected. Most agreed that the land should not be simply fenced off and restricted from use. Improving local infrastructure is a priority for the five chapters. These

improvements would address roads as well as electricity and running water. More employment opportunities in the area is also a major interest. EPA Region 6 shared these concerns with EPA Region 9, which has jurisdiction on the Navajo Nation.

Air and Water Concerns

Interviewees said that air and water quality and access to clean water were among the most important local environmental issues. Many believe that AUMs have contaminated water sources and local wells. They worry about the mines' potential effects on groundwater and its future use as a drinking water source. Community

members are concerned about health risks from rainwater that runs off from mines and toward homes and community areas. They also worry about flash floods and potential remedy impacts from 100-year storms.

Wind-blown contamination and dust are major concerns. People asked how and when air monitoring could take place, and the potential locations of air monitors. They asked about how to address wood hauling and burning of wood from contaminated areas.

Communication and Information Preferences

Many community members shared their preferences for communication and receiving information. Most agreed that EPA should be transparent about its work and strive to include all community members. Community members want EPA to keep chapter officials updated on all work. They also asked EPA to share information directly with community members. Many requested that EPA help coordinate information-sharing and education efforts across all sites. Options could include a community liaison or formation of a group to assist with sharing information across all five chapters.

Community members and local officials asked that EPA share information primarily in written form. Materials should include pictures and maps indicating the location of AUMs as well as contaminated water sources. Information should be simple and easy to understand. Most recommended sharing information through email, social media, regular mailings and site tours. EPA should provide written materials in English and Navajo. Navajo interpretation services should be available for oral communication.

Community members also talked about the importance of in-person meetings. They asked that EPA host meetings on past sampling and remediation activities and current cleanup planning. They also wanted to know more about upcoming activities at the UNC Mill, Northeast Church Rock Mine and Kerr-McGee Quivira Mine sites. Suggestions included standalone meetings at chapter houses or other community locations. A larger meeting could host all five chapters at one time. People also expressed interest in longer meetings or workshops to cover important information.

Community members and local officials also shared concerns about hard-to-reach groups. These groups include people in ill health, people in remote locations, and people without the time or resources to attend meetings. Most said that regularly mailed updates work well for remote community members and in-person visits to reach people in ill health and people unable to attend meetings. Several people stressed the importance of in-person, door-to-door contact with community members.



 Abandoned equipment on the UNC Mill site, as seen from Highway 566.





THE COMMUNITY INVOLVEMENT ACTION PLAN



*Flags representing the United States, state of New Mexico
and Navajo Nation fly over the Coyote Canyon Chapter House.*

THE COMMUNITY INVOLVEMENT ACTION PLAN

This action plan shares the tools that EPA will use to share information with the community. It also outlines how EPA staff will receive input from the community and consider it in the decision-making process. Finally, the action plan details EPA's partnership with NMED and the Navajo Nation tribal government for all activities at AUM sites.

Timing information is included with each outreach tool. This helps community members understand when EPA will do outreach activities and the activities to expect. People can also contact EPA's Community Involvement Coordinator with questions about future outreach activities.

EPA understands that many residents, and especially elders, are Navajo language speakers. To ensure the inclusion of all community members, EPA will have an interpreter or tribal representative at information meetings, open houses and door-to-door outreach. EPA typically does outreach with staff from NMED and NNEPA present as well. Interviewees asked that EPA develop printed materials in English and Navajo.



Community members can discuss concerns with EPA whenever a representative is in the area. They can also contact EPA's Community Involvement Coordinator by phone, email or mail at any time.

TOOLS FOR SHARING INFORMATION AND OPPORTUNITIES FOR EPA TO LEARN FROM THE COMMUNITY

EPA will use these tools to make sure community members have ways to provide meaningful input and to make sure EPA considers community concerns during cleanup decision making. People can provide input at any time by contacting EPA's Community Involvement Coordinator.

Written Communication

Most interviewees said they prefer receiving written communication from EPA. They also noted that written materials are an effective way to reach remote residents. Written materials should be short and simple and include as many graphics as possible.

EPA will provide written materials through fact sheets and flyers. These will be shared through the U.S. Postal Service and via email. The fact sheets will address community concerns identified during the interviews. EPA will make sure contact lists are up to date and include interested residents in the area. Community members on EPA's contact list will receive information such as EPA fact sheets or postcard meeting invitations. To be added to EPA's

contact list, please contact EPA Community Involvement Coordinator Adam Weece at (214) 665-2264 | weece.adam@epa.gov.

Information Sharing

EPA uses email to update the community on EPA activities and events hosted by other groups. EPA will maintain a broader email list that includes more parties to notify them of major actions or events. Examples of such events include public meetings, open houses and cleanup decisions. EPA will include community partners such as chapter and other elected officials in this broader outreach.

EPA has shared the following materials with community members:

Health Factsheets

EPA worked with the Agency for Toxic Substances and Disease Registry (ATSDR) and other partner agencies on fact sheets on uranium and radiation in the Navajo Nation. They talk about uranium and radiation basics and health effects of uranium and radiation. They also discuss ways to reduce contact with uranium and radiation.

TOOLS FOR SHARING INFORMATION & FOR EPA TO LEARN FROM THE COMMUNITY










								
Fact sheets	Email updates	Door-to-door	Special events	Coordination with other agencies	Job training programs	EPA presentations	EPA informational gatherings	Community group meetings
▼	▼	▼	▼	▼	▼	▼	▼	▼
TO DESCRIBE NEW WORK, CONDITIONS OR AS REQUESTED	TWICE A YEAR OR MORE OFTEN AS NEEDED	WHEN FIELD ACTIVITIES MIGHT IMPACT SPECIFIC HOUSEHOLDS OR AS NEEDED	ONCE A YEAR	ONGOING	TO DESCRIBE NEW WORK, CONDITIONS OR AS REQUESTED	WHEN MAJOR WORK IS PLANNED, WHEN A NEW RESPONSIBLE COMPANY IS IDENTIFIED, AS NEEDED AND AS REQUESTED	TO DESCRIBE NEW WORK, CONDITIONS OR AS REQUESTED DEPENDING ON UPCOMING WORK AND COMMUNITY CONCERNS THAT NEED IN DEPTH DISCUSSION	TO DESCRIBE NEW WORK, CONDITIONS OR AS REQUESTED DEPENDING ON UPCOMING WORK AND COMMUNITY CONCERNS THAT NEED IN DEPTH DISCUSSION

 Table describing information-sharing tools between EPA and the community.

Adam Weece
Community Involvement
Coordinator
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Agencies to Contact with Questions Fact Sheet

EPA and partner agencies created a fact sheet to help community members determine which agency to contact for questions related to uranium or radiation on the Navajo Nation.

Site-specific Factsheets

EPA has created fact sheets for the UNC Mill, Northeast Church Rock Mine and Kerr-McGee Quivira Mine sites over the years. They have included brief summaries of site histories, background information, upcoming site activities and summaries of completed work.

These materials are available on the EPA web pages listed below.

EPA Websites

Regular updates on EPA's website will provide cleanup information and important documents.

Information for the UNC Mill site is available at:

<http://www.epa.gov/superfund/united-nuclear>

Information for the Northeast Church Rock Mine and Kerr-McGee Quivira Mines is available online at:

<https://www.epa.gov/navajo-nation-uranium-cleanup/eastern-abandoned-uranium-mine-region>



Contact the EPA Community Involvement Coordinator to be added to the mailing list.

Social Media

Several interviewees said that social media is an effective way to reach people living in remote locations and people without the time or resources to attend meetings. EPA will explore ways to share information across social media platforms such as Facebook.

Information Repositories

Several people noted that EPA should make information available locally for all community members.

As a part of the Superfund process, EPA must maintain documents and information locally, where the public can easily access the material. This is called the “Information Repository.” Information repositories contain copies of technical or planning documents, fact sheets, meeting summaries, and other site information. EPA has information repositories at three locations:

University of New Mexico – Gallup Zollinger Library

705 Gurley Avenue,
Gallup NM 87301

Navajo Nation Navajo Superfund Office

43 Crest Road,
St. Michaels, AZ 86511

New Mexico Environment Department

1190 St. Francis Drive,
Santa Fe, NM 87505

Community members may request copies of documents by contacting EPA’s Community Involvement Coordinator.

Newspaper and Radio Communication

EPA will use the following media channels for outreach:

Newspaper Communication

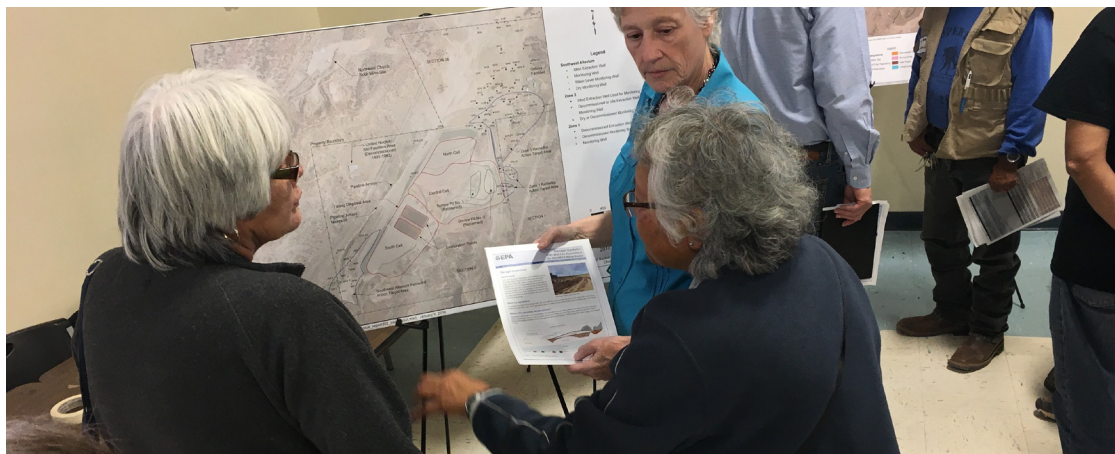
Navajo Times
Gallup Independent

Radio Communication

KTNN 660 AM: The Voice of the Navajo Nation
KGAK 1130 AM
KGLP 91.7 FM
KYVA 1230 AM


Uranium Awareness Outreach Campaign

EPA has been working with ATSDR to increase awareness among Navajo people about uranium issues on the Navajo Nation.



Community residents discuss the site with EPA during an inter-agency open house in 2017.



 EPA officials from Regions 6 and 9 discuss the UNC Mill site with community members.

EPA, ATSDR and the Indian Health Service (IHS) developed posters for 10 geographic regions of the Navajo Nation. These posters feature a map showing locations of AUMs, contaminated water sources, regulated watering points and other landmarks. They also include information about warning signs, reducing contact with uranium on the Navajo Nation and maintaining good health. EPA provided some of these materials to area residents during CIP interviews.

IHS and Community Health Representatives (CHRs) distributed these posters to IHS Health Clinics and chapters across the Navajo Nation. To prepare for this outreach, EPA, ATSDR and IHS trained the CHRs on the information in the posters. EPA will continue to distribute the posters during future meetings and by request. EPA will also continue to coordinate with ATSDR, IHS and the CHRs on uranium awareness outreach.

Presentations

Many interviewees suggested that EPA present information about local uranium issues at the chapter houses. Other community locations mentioned include Fire Rock Casino, the Rural Development Office, the Gallup senior center, Red Rock State Park, and Gallup-area schools as well as Bureau of Indian Affairs schools. Interviewees said previous presentations by EPA at large meetings were an effective way to reach people.

Many interviewees said that EPA should also host informational gatherings, especially when more time is needed for deep engagement with community members. Examples for these types of meetings include discussions about cleanup options for the mill and tailings area and mines, large amounts of work planned for an area, and community concerns requiring in-depth discussion.

Information Repositories

Check out the repository or visit the website.

EPA will use the following formats for these gatherings:

Meetings and Open Houses – larger community meetings that may include EPA presentations, poster sessions, and time for community members to ask questions and share feedback. EPA has previously hosted several such meetings, including forums about groundwater, revegetation, the Superfund law, and a health and risk workshop. Community members may request additional in-depth technical forums or trainings from EPA's Community Involvement Coordinator.


Small Venue Meetings and Focus Groups – smaller, more informal gatherings focused on a particular area, interested group or extended family. Community members share their thoughts and concerns with EPA staff.

Workshops and Facilitated Discussions – meetings designed to answer specific questions or address specific community concerns.

EPA Outreach in Action

EPA hosted four groundwater forums in 2013, 2014 and 2016. The most recent forum took place in April 2016.



 EPA officials present information for community members during public meetings.



Your input is important. Please provide input at any time by contacting the EPA Community Involvement Coordinator.

Key Contacts

U.S. Environmental Protection Agency

Region 6

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EPA will send out meeting notices at least one week prior to any gatherings via the email list and by contacting community partners and other outlets.

Typically, EPA staff will make presentations at chapter houses when major work is planned in an area or to increase awareness about upcoming EPA activities. Public meetings have been held at the Pinedale Chapter House, the Church Rock Chapter House and the Gallup Library.

EPA will reach out to local officials and share presentations at chapter houses, community association meetings and other events. Groups interested in a specific presentation can contact EPA's Community Involvement Coordinator.

Community Group Meetings

EPA staff meet regularly with members of the Red Water Pond Road community. These meetings include monthly conference calls to discuss community concerns and site activities. EPA also makes presentations at monthly Red Water Pond Road Community Association meetings. These short presentations provide time for community members to ask questions and share feedback. Representatives from the Coyote Canyon and Pinedale chapters interviewed in November 2017 asked that EPA staff make sure to share all information shared with the Red Water Pond Road community with surrounding chapters and communities.

Special Events

Several local events provide an opportunity to meet informally with residents:

- 1979 spill commemoration
- Community field day
- Annual Eastern Navajo Agency Fair
- Other events as requested/available

Job Training and Opportunities

EPA Region 9 provided a week-long job training program in Gallup in 2013. Additional job training will take place prior to the start of final cleanup actions. EPA will work with the Navajo Nation Department of Economic Development to announce potential job opportunities prior to the start of work.

Technical Assistance Services for Communities

Contact the EPA Community Involvement Coordinator if you would like to learn more about technical assistance services that EPA can provide to community groups.

Working with Navajo Nation Tribal Government

The Navajo Nation is a federally recognized tribe with its own governmental system. EPA policy is to consult on a government-to-government basis with federally recognized tribal governments when EPA actions and decisions may affect tribal interests.

EPA interacts with Navajo Nation government on several levels as a part of AUM assessment and cleanup on the Navajo Nation. EPA consults directly with the Navajo Nation President for significant developments, consistent with EPA's tribal policies and guidance. Examples of formal consultation include major decisions and new federal Five-Year Plans for addressing uranium contamination on the Navajo Nation. EPA collaborates with NNEPA's Superfund program and the Navajo Nation Department of Justice on all AUM assessment and cleanup activities. Finally, EPA communicates periodically with officials such as local Navajo Nation Council Delegates and chapter officials at key times during the Superfund process.

Coordination with Other Agencies and Organizations

There are several areas impacted by historic uranium mining and milling in New Mexico and on the Navajo Nation. Several federal agencies have teamed together to assess and address these health and environmental impacts.

The UNC Mill site is a part of the EPA Region 6 Grants Mining District, New Mexico, that has a 2015-2020 Five-Year Plan to Assess and Address Health and Environmental Impacts of Uranium Mining and Milling. It is available at: https://www.epa.gov/sites/production/files/2016-06/documents/gmd_2015_2020_five-year_plan_29mar16.pdf. The Plan's Appendix is available at: https://www.epa.gov/sites/production/files/2016-06/documents/appendix_a_history_and_detailed_activities_under_2010_five-year_plan_21mar16.pdf.

The Northeast Church Rock and Kerr-McGee Quivira Mines are part of EPA Region 9 Navajo Nation with its own Five-Year Plan. To access it, please visit: <http://www.epa.gov/navajo-nation-uranium-cleanup/five-year-plan-address-impacts-uranium-contamination>.

EPA Region 6 will continue to strengthen relationships with:

- NNEPA
- NMED
- New Mexico Energy, Minerals, and Natural Resources Department – Mining and Minerals Division
- Federal Five-Year Plan partners, including the Bureau of Indian Affairs, IHS, ATSDR, NRC and the U.S. Department of Energy, the U.S. Bureau of Land Management, and the U.S. Department of Agriculture (USDA) – U.S. Forest Service
- Research universities, including the University of New Mexico and Northern Arizona University (NAU)
- Community Land Use Planning Committees
- Chapter officials and other elected representatives
- The Red Water Pond Road Community Association
- The Pipeline Canyon Road/Rio Lobo community
- Others as suggested by community members and local officials

Summary

EPA and NMED interviewed community members, local officials and other stakeholders in the Coyote Canyon and Pinedale chapters in November 2017. EPA and NNEPA previously interviewed community members, local officials and other stakeholders in the Church Rock and Standing Rock chapters. Those interviews were part of the CIP for the Northeast Church Rock and Kerr-McGee Quivira Mine sites in 2015.

EPA used information from these interviews to learn about community concerns and prepare this CIP. EPA would like to thank interviewees and the communities for their time, patience and willingness to share their stories and concerns.

EPA recognizes that input and feedback from community members is crucial to the success of uranium cleanup on the Navajo Nation. EPA will continue to work closely with community members and elected officials in the cleanup process, as outlined in this CIP. Community members are also always welcome to provide input by contacting EPA's Community Involvement Coordinator.

APPENDICES

SITE DESCRIPTION - UNC MILL SITE

The 125-acre UNC Mill site is located 17 miles northeast of Gallup. It is near State Highway Route 566 and its intersection with the Rio Puerco, on the southern border of the Navajo Nation in Church Rock, McKinley County, New Mexico. It includes a former uranium ore processing mill (25 acres) and a tailings disposal area (100 acres). Two underground uranium mines formerly operated near the site. UNC operated the former Northeast Church Rock Mine, northwest of the site. Quivira (formerly Kerr-McGee) operated a mine north of the site. The uranium mill operated from 1977 to 1982. It processed uranium ore using crushing, grinding and acid-leach solvent extraction methods. Milling produced acidic slurry of ground rock and fluid tailings. Disposal of about 3.5 million tons of tailings took place in on-site impoundments. Facility operations contaminated

soil and groundwater. Groundwater cleanup and monitoring are ongoing.

Surface reclamation actions by UNC under the direction and oversight of the NRC at the site between 1988 and 1996 stabilized the mill tailings and protected the Rio Puerco from contamination spills like the one that occurred in 1979. To manage the cleanup, EPA divided the site into two areas, or operable units: groundwater (OU-1) and surface soil (OU-2).

The long-term remedy for OU-1 includes containment and removal of contaminated groundwater and evaporation of groundwater removed from aquifers using evaporation ponds. The groundwater remedy is currently protective of human health.

OU-2 activities focus on removing mine waste from the nearby Northeast Church Rock Mine and placing that mine waste on the tailings repository at the UNC Mill site. EPA expects the completion of the repository's final design in 2018. (See information on the design of the Northeast Church Rock Mine waste repository at the UNC Mill site on the next page.)

What Are the Steps to Construct the NECR Waste Repository?

1. **Design:** The design provides detailed construction and technical specifications describing how the repository will be constructed.
2. **NRC License:** The company responsible for the pollution at the mine, UNC, which is owned by GE, will submit a request (a "license amendment") to the NRC for construction. The NRC must approve the request before construction can begin. The NRC estimates that the license amendment process will take from two to five years.
3. **Legal Agreement:** If the NRC approves the request, EPA will then negotiate a legal agreement with UNC/GE to construct the repository.
4. **Construction:** Construction will take about four years.

In the meantime, five-year reviews by EPA indicate that the site's remedy is and remains protective. Continued protectiveness of the remedy requires completing cleanup activities that will adequately address all exposure pathways that could result in unacceptable risks.

What Is a Repository?

A repository is a place for holding waste. The UNC Mill site repository for mine waste from the NECR Mine site will consist of an engineered cell with a top (cover) and bottom (liner) to keep contamination from further polluting the environment.

The Church Rock Uranium Spill

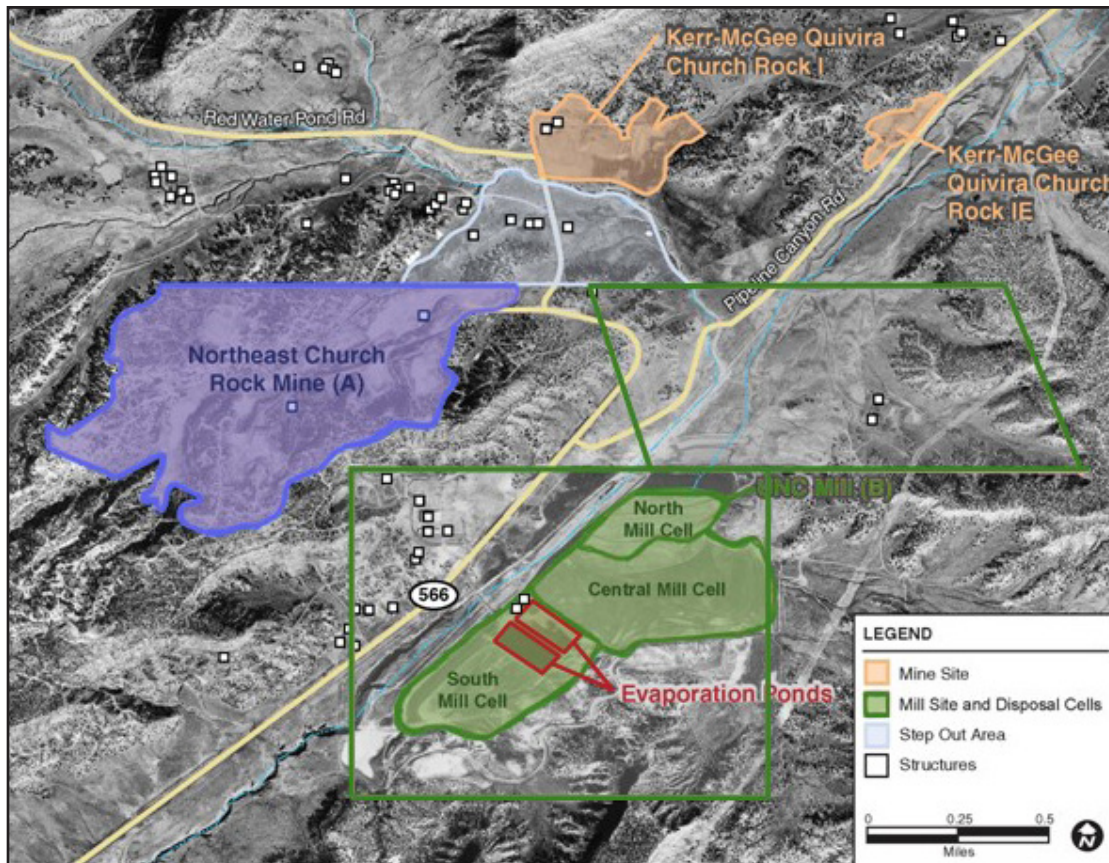
On July 16, 1979, UNC's Church Rock uranium mill tailings disposal pond breached its dam.

Over 1,000 tons of solid radioactive mill waste and 93 million gallons of acidic, radioactive tailings solution flowed into the Rio Puerco. Contaminants traveled 80 miles downstream.

The accident was the largest release of radioactive material in U.S. history. EPA listed the site on the Superfund Program's National Priorities List in 1983.

NORTHEAST CHURCH ROCK (NECR) MINE

The NECR Mine is a former uranium mine at the northern end of State Highway 566, about 17 miles northeast of Gallup, in the Pinedale Chapter of the Navajo Nation. UNC operated the NECR Mine from 1967 to 1982. During mining, about 3.5 million tons of ore was extracted, making it one of the highest-producing uranium mines on the Navajo Nation. EPA has cleaned up over 200,000 tons of contaminated materials in the residential "Step Out" areas shown in the map to the left. The mine waste pile has been covered and stabilized until it is moved to the UNC Mill site.



 Northeast Church Rock Mine and United Nuclear Corporation site map.

KERR-MCGEE QUIVIRA MINES

The two Kerr-McGee Quivira Mines – Church Rock #1 and Church Rock #1 East (or CR-1 and CR-1E) – are former uranium mines just northeast of the NECR Mine. They are also at the northern end of State Highway 566, in the Coyote Canyon chapter of Navajo Nation. Kerr-McGee operated the mines from 1974 to 1985. During this time, about 1.2 million tons of ore was extracted and sent to the Rio Algom Mill in Ambrosia Lake. These mines also rank among the highest-producing mines on the Navajo Nation. Rio Algom Mining Company, a successor to Kerr-McGee, stabilized the main waste pile and

removed about 20,000 tons of contaminated soils along Red Water Pond Road. The Kerr-McGee Quivira Mines are now being addressed with funding from the Tronox settlement.

A CLOSER LOOK: MINE WASTE REMOVAL AND PLACEMENT ON THE TAILINGS REPOSITORY AT THE UNC MILL SITE

Step 1: Digging and Hauling

NECR Mine waste will be dug up from the purple work areas shown in Figure 2 of the UNC Mill Site repository design update fact sheet ([https://](https://www.epa.gov/sites/production/files/2017-05/documents/factsheet-unc-mill-site-repository-necr-waste-design-update.pdf)

www.epa.gov/sites/production/files/2017-05/documents/factsheet-unc-mill-site-repository-necr-waste-design-update.pdf, labeled as “NECR Mine Site” in legend). Covered trucks will haul the waste to the UNC Mill site. The trucks will use new roads to stay off public roads as much as possible. The trucks will cross Route 566 at a stoplight just south of the Pipeline Road turnoff (see Figure 2). Each truck carries 30 cubic yards (about 42 tons) of waste.

Step 2: Mine Waste Placement and Covering

The mine waste will go in the repository, shown with black diagonal lines in Figure 2 (labeled as “Extent of Final Repository” in legend). The clay cover layer for the existing mill tailings cells



Navajo Nation President Russell Begaye speaking at the 37th Red Water Pond Road Spill Commemoration Ceremony.



 EPA and community members examine erosion to the Pipeline Arroyo during a site tour.

(labeled as “Existing Cover/New Liner”) will stay in place and serve as a liner for the mine waste. After placement of the mine waste on the liner, soil from the borrow areas will be mixed with rock to create an evapotranspiration cover (known as an “ET cover”) that contains the mine waste and prevents exposure to people and the environment. The cover also prevents wind and water erosion, and keeps rainwater and snow melt out of the mine waste. Figure 3 (also part of the UNC Mill Site repository design update fact sheet (<https://www.epa.gov/sites/production/files/2017-05/documents/factsheet-unc-mill-site-repository-necr-waste-design-update.pdf>)) shows how an ET cover works. While most water runs off the cover, water that goes into the cover comes back out by evaporation or by plant roots taking up the water from the clean cover

(transpiration). The rock in the cover minimizes erosion from wind or water. The cover is designed to last at least 1,000 years.

Step 3: Stormwater Control Installation

Stormwater management – or “stormwater controls” – is a key part of the waste repository. Stormwater controls keep soil from running off the work areas and stops water from eroding the repository or nearby areas. Figure 2 shows stormwater controls at the site in orange (labeled as “Stormwater Controls” in legend). The Pipeline Arroyo, which runs along the west side of the repository, will have major stormwater controls. A large engineered structure will direct water flow away from the repository. This will help prevent erosion.

Step 4: Restoration at the NECR Mine Site

After removal of contaminated soil from the NECR Mine site, surveys by EPA will make sure that all mine waste has been properly removed and the area is safe. The site will then be regraded and revegetated.

For a detailed review of EPA’s cleanup process, please see “EPA Superfund Process on the Navajo Nation.”

For information on the UNC Mill site, please visit:

<http://www.epa.gov/superfund/united-nuclear>

For more information on the NECR Mine and the Kerr-McGee Quivira Mines, please visit:

<https://www.epa.gov/navajo-nation-uranium-cleanup/eastern-abandoned-uranium-mine-region>

GLOSSARY

Abandoned Uranium Mine (AUM) Claim

– An AUM claim is generally associated with a patented or unpatented mining claim or a lease of federal, state, tribal or private lands. A claim may represent a single feature such as a surface or underground excavation, or it may include an area containing a complex of multiple interrelated excavations. As a result, one claim may represent multiple “mines” listed in other databases.

Action Memorandum – EPA’s primary decision document that determines the need for a removal action, authorizes the removal action, identifies the action and cleanup levels (if applicable), and explains the rationale for the removal response.

Contamination – Introduction into water, air, and soil of microorganisms, chemicals, toxic substances, wastes, or wastewater in a concentration that makes the medium unfit for its next intended use.

Engineering Evaluation/Cost Analysis (EE/CA) – An analysis of cleanup alternatives for removal actions requiring more than six months’ planning time. EPA selects one of the alternatives outlined in the EE/CA in the Action Memorandum.

Groundwater – The supply of fresh water found beneath the Earth’s surface, usually in aquifers, which supply wells and springs. Because groundwater is a major source of drinking and irrigation water, there is growing concern over contamination from leaching agricultural or industrial pollutants.

Information Repository – A record storage area at or near a Superfund site that contains reports, documents and fact sheets pertaining to the site.

Radiation – Energy that travels in the form of waves or high-speed particles. One way that radiation can be released to the environment is

during the decay of radioactive elements such as uranium.

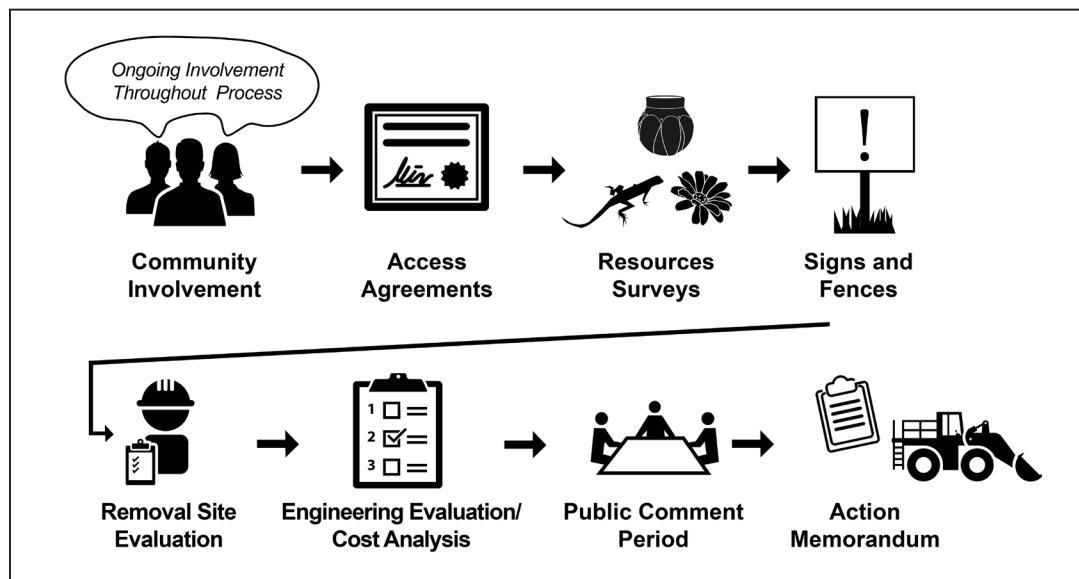
Record of Decision – A public document issued by EPA that explains which cleanup alternative will be used to clean up a Superfund site as well as the factors that led to its selection.

Remedial Action – The actual construction or implementation phase of Superfund site cleanup.

Removal Action – Short-term immediate actions that address releases of hazardous substances that require expedited responses.

Superfund – The program operated under the legislative authority of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the Superfund Amendments and Reauthorization Act (SARA) that funds and carries out EPA’s emergency and long-term removal and remedial activities.

Uranium – A heavy, naturally radioactive, metallic element that is used to produce nuclear power and weapons.



 Superfund process on the Navajo Nation.

LIST OF ACRONYMS

ATSDR	Agency for Toxic Substances and Disease Registry	RECA	Radiation Exposure Compensation Act
AUM	Abandoned Uranium Mine	RESEP	Radiation Exposure Screening and Education Program
BCS	Birth Cohort Study	ROD	Record of Decision
BIA	Bureau of Indian Affairs	SARA	Superfund Amendments and Reauthorization Act
CDC	Centers for Disease Control and Prevention	TANA	Technical Assistance Needs Assessment
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	TASC	Technical Assistance Services for Communities
CHERS	Community Health Environmental Research Staff	UMTRA	Uranium Mill Tailings Remedial Action Program
CHR	Community Health Representative	UNM	University of New Mexico
CIP	Community Involvement Plan	USDA	United States Department of Agriculture
CUE-JTH	Community Uranium Exposure-Journey to Healing Program		
DOE (USDOE)	United States Department of Energy		
EE/CA	Engineering Evaluation/Cost Analysis		
EPA (USEPA)	United States Environmental Protection Agency		
ET	Evapotranspiration		
IHS (NAIHS)	Navajo Area Indian Health Service		
NAU	Northern Arizona University		
NDOH	Navajo Department of Health		
NDWR	Navajo Department of Water Resources		
NECR	Northeast Church Rock		
NNAML	Navajo Nation Abandoned Mine Lands		
NNEPA	Navajo Nation Environmental Protection Agency		
NRC (USNRC)	United States Nuclear Regulatory Commission		
NTUA	Navajo Tribal Utility Authority		



URANIUM AND RADIATION RESOURCE LIST



 Sign welcoming people to the Pinedale Chapter house.

Uranium and Radiation on the Navajo Nation Resource List 2017

Topic	Agency, Program, and Location	Telephone Number
Mines and structures		
Cleanup of chemical and radiological hazards at abandoned uranium mines (AUM)	U.S. Environmental Protection Agency (EPA), Region 9 Superfund Program, San Francisco, California Navajo Nation EPA (NNEPA), Navajo Superfund Program, Window Rock, Arizona	(800) 231-3075 (505) 240-0093 Eastern region (480) 250-0990 Central region (928) 215-9402 Northern region (415) 972-3068 Western region (800) 314-1846
Contaminated structures	NNEPA, Navajo Superfund Program, Window Rock, Arizona	(800) 314-1846
Actions to reduce physical hazards at AUMs	Navajo Abandoned Mine Lands (AML) Reclamation Uranium Mill Tailings Remedial Action (UMTRA) Department	(928) 871-6982 Window Rock (505) 368-1220 Shiprock (928) 283-3188 Tuba City
Radon in your home, radon test kits	NNEPA, Radon Program, Window Rock, Arizona	(928) 871-6790
Uranium mill sites		
Disposal sites—long-term surveillance and maintenance (LTS&M)	U.S. Department of Energy Office of Legacy Management (LM), Grand Junction, Colorado	(970) 248-6621 Mexican Hat manager (970) 248-6018 Shiprock manager (970) 248-6073 Tuba City manager
Former processing site—LTS&M	LM, Grand Junction, Colorado	(970) 248-6621 Monument Valley manager
Technical oversight, community outreach	Navajo AML Reclamation UMTRA Department, Window Rock, Arizona	(505) 860-7279
Disposal sites—general licensing and oversight	U.S. Nuclear Regulatory Commission (NRC), Washington, DC	(301) 415-6749
Former processing site—oversight	NRC, Washington, DC	(301) 415-6749
Health		
Preventive health information, uranium awareness posters	Navajo Department of Health (NDOH), Community Health Representative/Outreach Program, Window Rock, Arizona	(928) 871-6786
Uranium medical screening and monitoring program	Navajo Area Indian Health Service (NAIHS), Northern Navajo Medical Center, Community Uranium Exposure—Journey to Healing, Shiprock, New Mexico	(505) 368-7391 or (505) 368-7402
Navajo Birth Cohort Study	University of New Mexico, Albuquerque, New Mexico Agency for Toxic Substances and Disease Registry (ATSDR) Division of Toxicology and Human Health Effects, Atlanta, Georgia	(877) 545-6775 (770) 488-3684
Downwinders radiation exposure compensation claim	NIAHS, Northern Navajo Medical Center, Radiation Exposure Screening and Education Program (RESEP), Shiprock, New Mexico NDOH, Office of Navajo Uranium Workers, Shiprock, New Mexico	(505) 368-7054 (505) 368-1260
Uranium workers radiation exposure compensation claim	NAIHS, Northern Navajo Medical Center, RESEP, Shiprock, New Mexico NDOH, Office of Navajo Uranium Workers, Shiprock, New Mexico	(505) 368-7054 (505) 368-1260

Topic	Program and Agency	Telephone Number
Water		
Water hauling practices from safe drinking water sources	NNEPA, Public Water Systems Supervision Program, Window Rock, Arizona	(928) 871-7755 http://www.navajopublicwater.org/
Locations of regulated watering points	Navajo Tribal Utility Authority (NTUA), Fort Defiance, Arizona	(800) 528-5011
Water quality of NTUA piped water in your home, or from an NTUA public water system	NTUA, Fort Defiance, Arizona	(928) 729-6207 Ask for "consumer confidence report." Also available online at: http://www.ntua.com/ccr14.html
Surface water and groundwater quality	NNEPA, Water Quality Program	(928) 871-7185 Fort Defiance, Chinle (505) 368-1037 Northern, Eastern (928) 890-7599 Western
Operation and maintenance of livestock water sources	Navajo Department of Water Resources (NDWR), Technical, Construction, and Operations Branch	Contact a district office
Locations of unregulated sources, livestock wells, windmills, earthen dams		(505) 908-2740 To'hajiilee (928) 674-2210 Chinle (505) 786-2396 Crownpoint (928) 657-8094 Dilkon (928) 729-4003 Fort Defiance (928) 755-5971 Ganado (928) 686-3289 Leupp (505) 655-5402 Pueblo Pintada (505) 368-1146 Shiprock (928) 656-3674 Teec Nos Pos (928) 283-3170 Tuba City (505) 778-5337 Vanderwagon

Tuba City Dumpsite		
Project lead	BIA, Western Regional Office, Phoenix, Arizona	(602) 379-3723
BIA coordination	BIA, Division of Environmental and Cultural Resources, Washington, DC	(703) 390-6482
BIA community outreach	BIA, Navajo Regional Office, Gallup, New Mexico	(505) 863-8285
Hopi Tribal water	The Hopi Tribe, Water Resources Program, Kykotsmobi, Arizona	(928) 734-3712
Remedial investigation and feasibility study oversight	EPA, Region 9 Superfund Program, San Francisco, California	(800) 231-3075
Navajo Nation Solid Waste Act	NNEPA, Resource Conservation and Recovery Program, Window Rock, Arizona	(928) 871-7816

Abbreviations		Navajo Nation Community Outreach Network Office (928) 810-2100 #2 Beacon Road P.O. Box 2909 Window Rock, Arizona 86515 (across from the Navajo Arts and Crafts Enterprise building south of Highway 264)
AML	Abandoned Mine Lands	
ATSDR	Agency for Toxic Substances and Disease Registry	Milton Bluehouse Navajo Nation Outreach Liaison (970) 773-8347 Cellphone Milton.Bluehouse@lm.doe.gov
AUM	abandoned uranium mine	
BIA	Bureau of Indian Affairs	
EPA	U.S. Environmental Protection Agency	
LM	U.S. Department of Energy Office of Legacy Management	
LTS&M	long-term surveillance and maintenance	
NAIHS	Navajo Area Indian Health Service	
NDOH	Navajo Department of Health	
NDWR	Navajo Department of Water Resources	
NNEPA	Navajo Nation Environmental Protection Agency	
NRC	U.S. Nuclear Regulatory Commission	
NTUA	Navajo Tribal Utility Authority	
RESEP	Radiation Exposure Screening and Education Program	
UMTRA	Uranium Mill Tailings Remedial Action Program	



 Red Water Pond Road Community Association sign, near the site.

